

AMENDMENTS TO THE CLAIMS

1. (currently amended) A method of removing solid carbon dioxide from cryogenic equipment, comprising the steps of:
 - (a) introducing a stream including ethane to said cryogenic equipment to convert solid carbon dioxide to liquid form whereby a mixture of liquid ethane and liquid carbon dioxide is formed; and
 - (b) removing the mixture of liquid ethane and liquid carbon dioxide from the cryogenic equipment, further comprising the step of adjusting the relative percentages of ethane and carbon dioxide for a given pressure and temperature such that the mixture of liquid ethane and liquid carbon dioxide is near azeotropic.
2. (previously presented) The method of claim 1, in which the cryogenic equipment is used to produce liquefied natural gas.
3. (canceled)
4. (previously presented) The method of claim 1, in which the stream including ethane contains carbon dioxide up to 65 %mol.
5. (previously presented) The method of claim 1, in which the method further comprises the step of separating the mixture of liquid ethane and liquid carbon dioxide to form a first product enriched in ethane and a second product enriched in carbon dioxide.
6. (previously presented) The method of claim 5, in which the first and second product are separated by distillation, extraction, absorption, crystallisation, decanting, multi-stage extraction or other chemical treatments or any combination thereof.
7. (previously presented) The method of claim 1, in which the mixture of liquid ethane and liquid carbon dioxide is azeotropic, and is separated to form a first

product enriched in ethane and a second product enriched in carbon dioxide by extractive distillation or membrane-based separation techniques or a combination thereof.

8. (previously presented) The method of claim 5, in which one or more alkanes or their isotopes are introduced to the mixture prior to the separation step.

9. (previously presented) The method of claim 5, in which the stream that includes ethane comprises the first product that is recycled to the step (a).

10. (currently amended) A method of removing solid carbon dioxide from cryogenic equipment, wherein the cryogenic equipment contains liquefied natural gas, the method comprising the steps of:

- (a') removing the liquefied natural gas from the cryogenic equipment;
- (a) introducing a stream including ethane to convert solid carbon dioxide to liquid form whereby a mixture of liquid ethane and liquid carbon dioxide is formed; and
- (b) removing the mixture of liquid ethane and liquid carbon dioxide from the cryogenic equipment, further comprising the step of adjusting the relative percentages of ethane and carbon dioxide for a given pressure and temperature such that the mixture of liquid ethane and liquid carbon dioxide is near azeotropic.

11. (currently amended) A method of producing liquefied natural gas, wherein natural gas is introduced in cryogenic equipment and is cooled down to form liquefied natural gas, and further wherein solid carbon dioxide is removed from the cryogenic equipment by:

- (a) introducing a stream including ethane to the cryogenic equipment to convert solid carbon dioxide to liquid form whereby a mixture of liquid ethane and liquid carbon dioxide is formed; and
- (b) removing the mixture of liquid ethane and liquid carbon dioxide from the cryogenic equipment, wherein relative percentages of ethane and carbon dioxide are

adjusted for a given pressure and temperature such that the mixture of liquid ethane and liquid carbon dioxide is near azeotropic.

12. (canceled)
13. (previously presented) The method of claim 11, wherein the stream including ethane contains carbon dioxide up to 65 %mol.
14. (previously presented) The method of claim 11, wherein the liquefied natural gas is removed from the cryogenic equipment prior to the step (a).
15. (canceled)
16. (previously presented) The method of claim 2, in which the stream including ethane contains carbon dioxide up to 65 %mol.
17. (previously presented) The method of claim 3, in which the stream including ethane contains carbon dioxide up to 65 %mol.
18. (previously presented) The method claim 2, in which the method further comprises the step of separating the mixture of liquid ethane and liquid carbon dioxide to form a first product enriched in ethane and a second product enriched in carbon dioxide.
19. (previously presented) The method claim 3, in which the method further comprises the step of separating the mixture of liquid ethane and liquid carbon dioxide to form a first product enriched in ethane and a second product enriched in carbon dioxide.
20. (previously presented) The method claim 4, in which the method further comprises the step of separating the mixture of liquid ethane and liquid carbon

dioxide to form a first product enriched in ethane and a second product enriched in carbon dioxide.

21. (new) A method of removing solid carbon dioxide from cryogenic equipment, comprising the steps of:

(a) introducing a stream including ethane to said cryogenic equipment to convert solid carbon dioxide to liquid form whereby a mixture of liquid ethane and liquid carbon dioxide is formed; and

(b) removing the mixture of liquid ethane and liquid carbon dioxide from the cryogenic equipment, wherein the solid carbon dioxide is already present on a surface of said cryogenic equipment prior to said introducing said stream.

22. (new) The method of claim 21, in which the cryogenic equipment is used to produce liquefied natural gas.

23. (new) The method of claim 21, further comprising the step of adjusting the relative percentages of ethane and carbon dioxide for a given pressure and temperature such that the mixture of liquid ethane and liquid carbon dioxide is near azeotropic.

24. (new) The method of claim 21, in which the stream including ethane contains carbon dioxide up to 65 %mol.

25. (new) The method of claim 21, in which the method further comprises the step of separating the mixture of liquid ethane and liquid carbon dioxide to form a first product enriched in ethane and a second product enriched in carbon dioxide.

26. (new) The method of claim 25, in which the first and second product are separated by distillation, extraction, absorption, crystallisation, decanting, multi-stage extraction or other chemical treatments or any combination thereof.

27. (new) The method of claim 21, in which the mixture of liquid ethane and liquid carbon dioxide is azeotropic, and is separated to form a first product enriched in ethane and a second product enriched in carbon dioxide by extractive distillation or membrane-based separation techniques or a combination thereof.

28. (new) The method of claim 25, in which one or more alkanes or their isotopes are introduced to the mixture prior to the separation step.

29. (new) The method of claim 25, in which the stream that includes ethane comprises the first product that is recycled to the step (a).